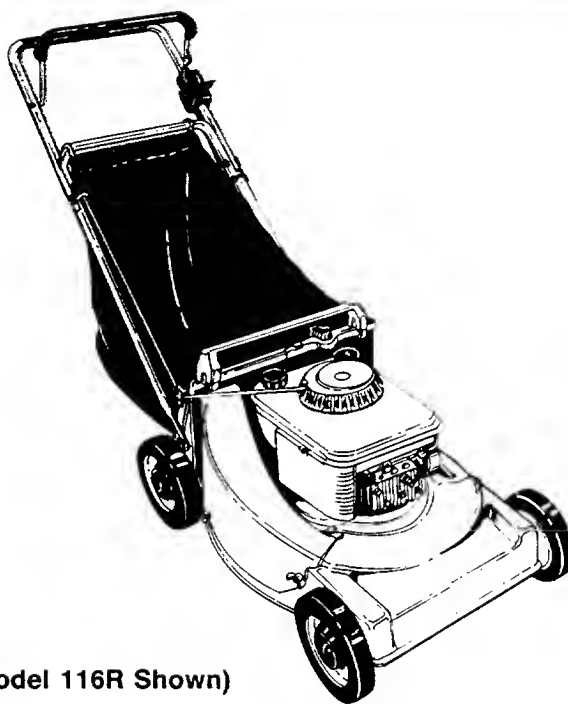


\$1.00

OWNER'S GUIDE

ASSEMBLY • OPERATION • MAINTENANCE • PARTS



(Model 116R Shown)

**21"
CONVERTIBLE
ROTARY
MOWERS**

Model Numbers

119-109R000

119-115R000-068

119-116R000-068

119-117R000-068

119-119R000-068

190-077-000

Important: Read Safety Rules and Instructions Carefully

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Dear Customer,

So often throughout the year we are all in a rush to meet our daily obligations.

However, we at MTD Products Inc are taking a quick moment out to say...

"Thank you for your business."

Sincerely,

MTD PRODUCTS INC



INSTRUCTIONS GIVEN WITH THIS SYMBOL ARE FOR PERSONAL SAFETY. BE SURE TO FOLLOW THEM.

LIMITED WARRANTY

For one year from the date of original retail purchase, MTD PRODUCTS INC will either repair or replace, at its option, free of charge, F.O.B. factory or authorized service firm, any part or parts found to be defective in material or workmanship. Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser. Transportation charges for any parts submitted for replacement under this warranty must be paid by the purchaser unless such return is requested by MTD PRODUCTS INC.

This warranty will not apply to any part which has become inoperative due to misuse, excessive use, accident, neglect, improper maintenance, alterations, or unless the unit has been operated and maintained in accordance with the instructions furnished. This warranty does not apply to the engine, Peerless components, motor, battery (except as noted below) or component parts thereof. Please refer to the applicable manufacturer's warranty on these items.

A battery which proves defective within ninety (90) days will be replaced without charge. After 90 days but within one year from the date of purchase, MTD will replace the defective battery for a charge of 1/12 of the current retail price of the battery for each full 30 day period between the date of purchase and the date of return.

This warranty will not apply where the unit has been used commercially.

Warranty service is available through your local authorized service dealer or distributor. If you do not know the dealer or distributor in your area, please write to the Customer Service Department of MTD.

The return of a complete unit will not be accepted by the factory unless prior written permission has been extended by MTD.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

WARNING: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

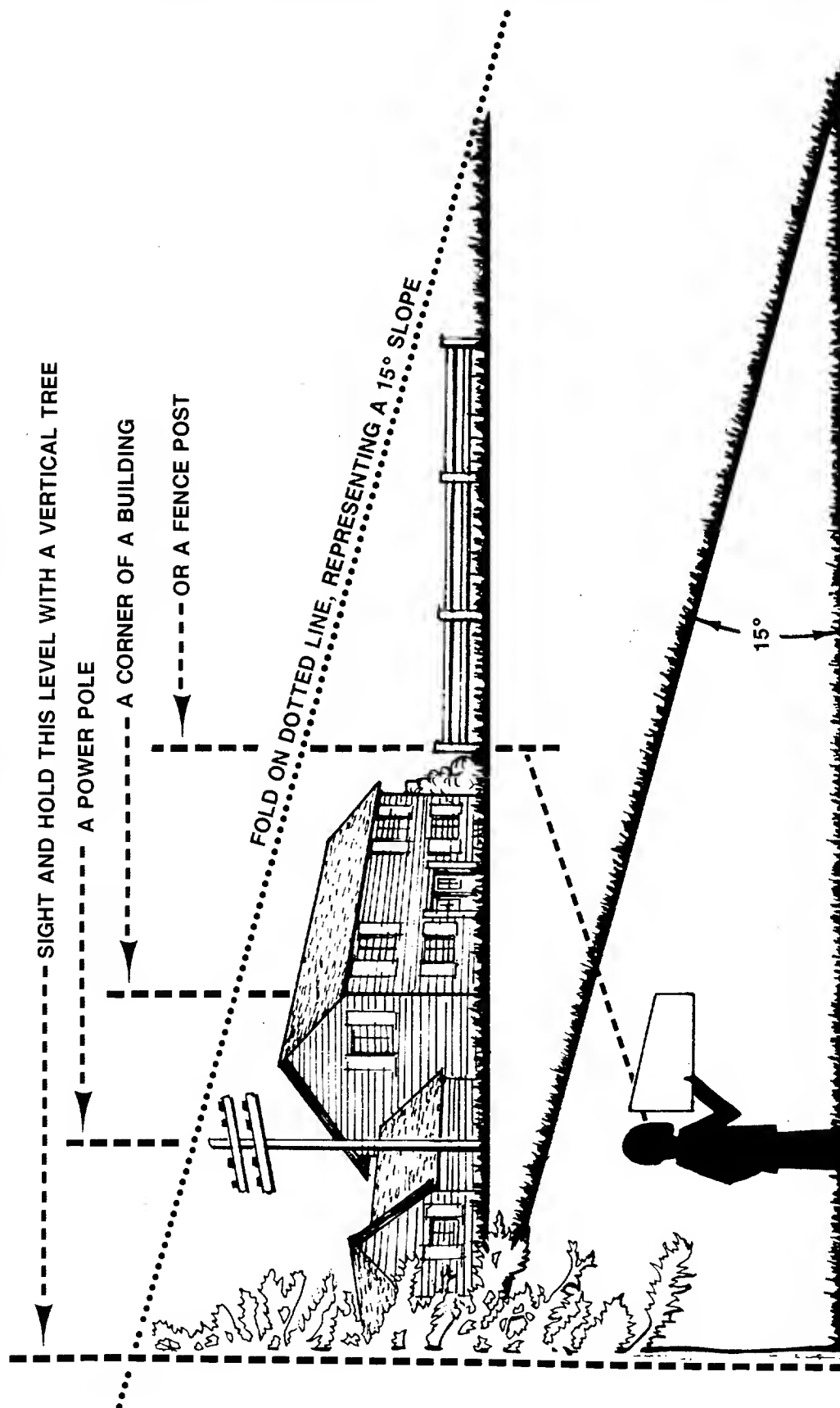
In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer.

Cut Along This Line

USE THIS SHEET AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.

SLOPE GAUGE

(Keep this sheet in a safe place for future reference.)



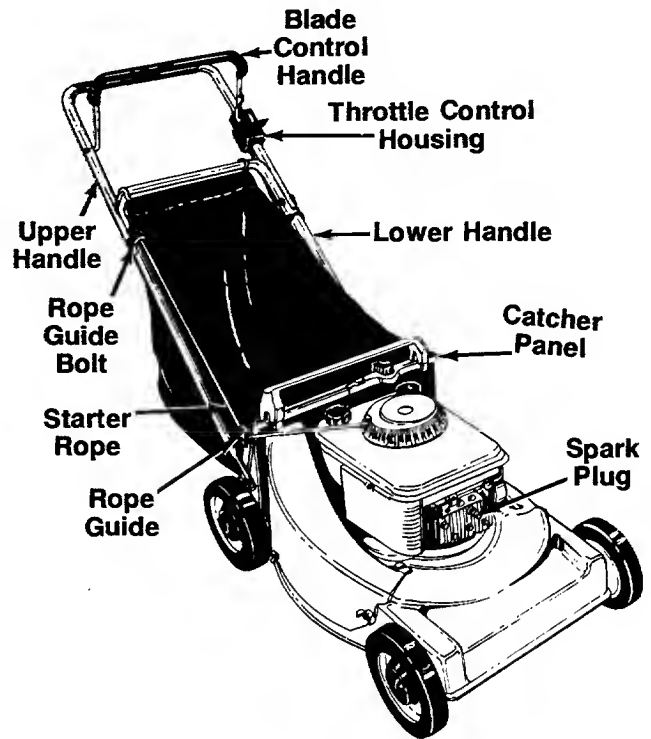
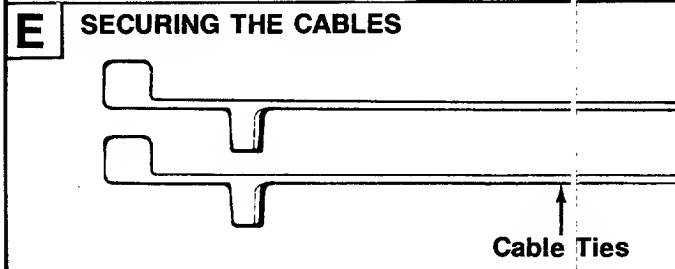
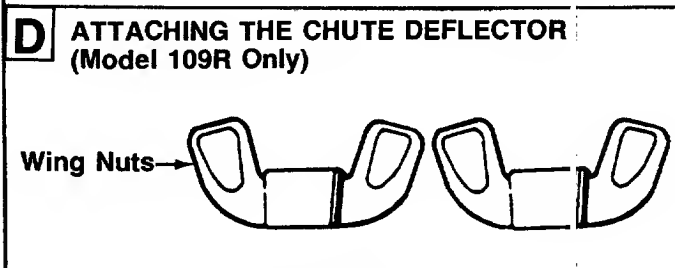
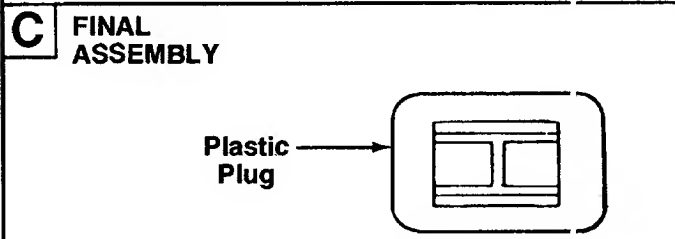
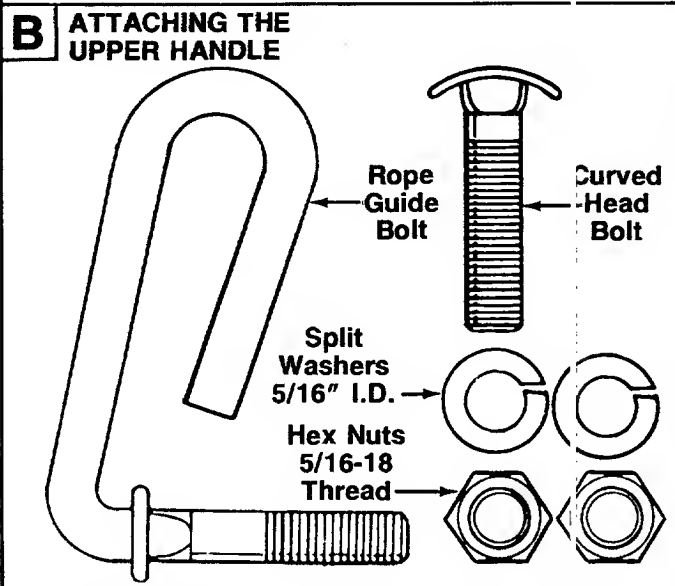
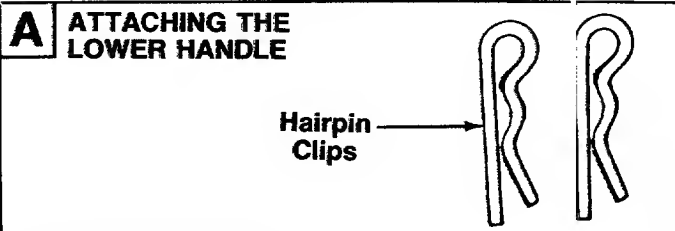
Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2½ feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

Operate RIDING mowers up and down slopes, never across the face of slopes.

Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

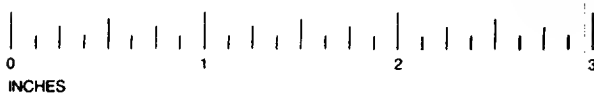
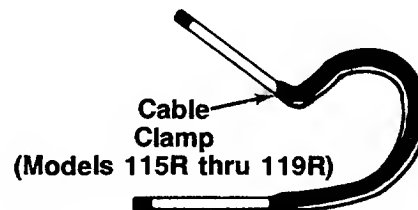
CONTENTS OF HARDWARE PACK/PARTS IDENTIFICATION

Remove this sheet from your owner's manual and lay the hardware on the illustration for identification purposes. After assembly, keep the Slope Gauge which is on the reverse side of this sheet for future use.
(Hardware pack may contain extra items which are not used on your unit.)



(Model 116R Shown)


PARTS IDENTIFICATION



IMPORTANT

RULES FOR SAFE OPERATION



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR LAWN MOWER. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL—  **HEED ITS WARNING.**



Your lawn mower was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.



TRAINING

1. Read this owner's manual carefully in its entirety before attempting to assemble or operate this machine. Be completely familiar with the controls and the proper use of this machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Your rotary mower is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times.
3. Never allow children to operate a power mower. Only persons well acquainted with these rules of safe operation should be allowed to use your mower.
4. Keep the area of operation clear of all persons, particularly small children and pets. Stop engine when they are in the vicinity of your mower to help prevent blade contact or thrown object injury. Although the area of operation should be completely cleared of foreign objects, an object may have been overlooked and could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area.



PREPARATION

1. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones and other foreign objects which could be picked up and thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area.
2. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine in any direction.
3. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts to avoid entanglement in the moving parts. Never operate a unit in bare feet, sandals, or sneakers.
4. Check the fuel before starting the engine. Gasoline is an extremely flammable fuel. Do not fill the gasoline tank indoors, while the engine is running, or until engine has been allowed to cool for two minutes after running. Replace gasoline cap securely and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.
5. Disengage the self-propelled mechanism or drive clutch on units so equipped before starting the engine.
6. The blade control handle is a safety device. Never attempt to bypass its operation. Doing so makes the safety device inoperative and may result in personal injury through contact with the rotating blade. The blade control handle must operate easily in both directions.
7. Never attempt to make a wheel or cutting height adjustment while the engine is running.
8. Never operate the equipment in wet grass. Always be sure of your footing. A slip and fall can cause serious personal injury. Keep a firm hold on the handle and walk, never run. Mow only in daylight or in good artificial light.



OPERATION

9. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15° as shown on the slope gauge, do not operate this unit on that area or serious injury could result.
1. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
2. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times as the rotating blade can cause injury.
3. Stop the blade when crossing gravel drives, walks or roads.
4. After striking a foreign object, stop the engine, remove the wire from the spark plug, and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
5. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
6. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging the chute. The cutting blade continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.
7. Before cleaning, repairing or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
8. Do not run the engine indoors.
9. Mow across the face of slopes, never up-and-down. Exercise extreme caution when changing direction on slopes. Do not mow excessively steep slopes. Always be sure of your footing. A slip and fall can cause serious personal injury.
10. Never operate mower without proper guards, plates or other safety protective devices in place.
11. Do not operate this mower with the chute door open, unless the complete grass catcher is properly mounted on the mower.



MAINTENANCE AND STORAGE

1. Check the blade and engine mounting bolts at frequent intervals for proper tightness.
2. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
3. Never store the equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
4. To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
5. Check the grass catcher bag frequently for wear or deterioration. For safety protection, replace only with new bag meeting original equipment specifications.

➔ **IMPORTANT:** This unit is shipped **WITHOUT GASOLINE** or **OIL**. After assembly, service engine with gasoline and oil as instructed in the separate engine manual packed with your unit.

➔ **NOTE:** Reference to right or left hand side of the mower is observed from the operating position. Refer to parts identification on page 4 for location of parts when assembling the mower.

ASSEMBLY INSTRUCTIONS

This owner's manual covers both side discharge (Model 109R) and top discharge (Models 115R thru 119R) rotary mowers. Follow only the instructions which pertain to your style mower.

Tools Required for Assembly

- (1) Pair of Pliers
- (1) 1/2" Wrench*
- (1) 5/16" Wrench or Nutdriver*
- *Or one 6" Adjustable Wrench.

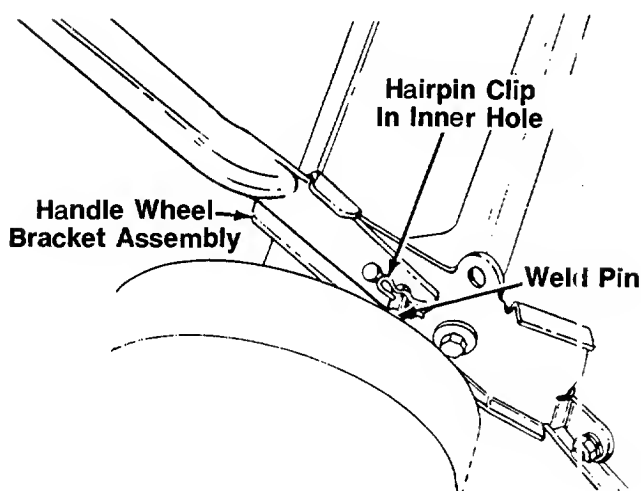


FIGURE 1.

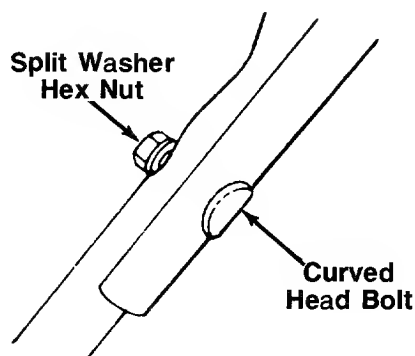


FIGURE 2.

UNPACKING

1. Remove the lawn mower from the carton by opening the top flaps and lifting the unit out. Be careful of the staples. Make certain all parts and literature have been removed from the carton before the carton is discarded.
2. Disconnect and ground the spark plug wire by hooking it into the "V" slot on the engine. Check beneath the deck for any cardboard packaging. Remove if present.
3. Stretch out all control cables and place on the floor. Be careful not to bend or kink the cables at any time during assembly.
4. Remove page four from this manual and lay the contents of the hardware pack on the illustration for identification.

ATTACHING THE LOWER HANDLE (Hardware A)

1. For shipping purposes your mower is set with the wheels in the lowest cutting height position. Raise the mower to the highest setting for assembly of lower handle.
2. Attach the lower handle by placing the bottom holes in the lower handle over the weld pins on the handle wheel bracket assemblies on the rear of the deck. Make certain the instruction label on the lower handle can be read from the operating position.
3. Using a pair of pliers, squeeze on leg of the lower handle against the handle wheel bracket assembly. Insert the hairpin clip into the inner hole on the weld pin. See figure 1. Repeat on other side.

ATTACHING THE UPPER HANDLE (Hardware B)

1. Place the upper handle in position over the lower handle. The label on the throttle control housing and the control lever must be facing up.
2. Secure the left hand side of upper handle using the curved head bolt, split washer and hex nut as shown in figure 2.

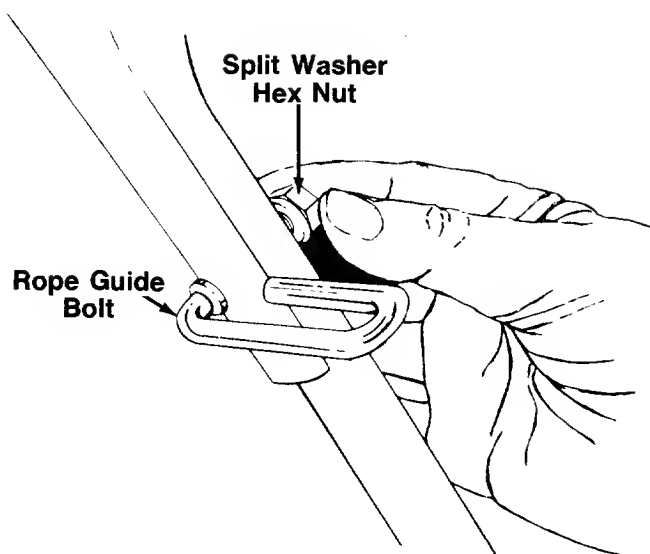


FIGURE 3.

3. Insert the rope guide bolt through the right hand side of upper and lower handle. See figure 3. Secure with split washer and hex nut, finger tight only.

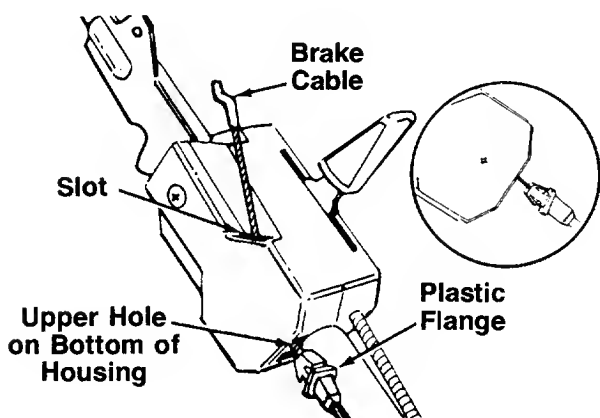


FIGURE 4.

ATTACHING THE BRAKE CABLE

1. The brake cable is attached to the engine, and has a "Z" fitting on the loose end. Route the brake cable to the outside of the height adjustment handle and handle mounting bracket, and below the lower handle. Place end of cable into the upper hole on the bottom of the control housing, and through the slot as shown. The angle of the plastic flange must be positioned downward as shown in figure 4. Be careful not to bend or kink the cable at any time.
2. Push the plastic fitting until it locks into the control housing.



WARNING

Brake cable must be assembled as shown for proper blade brake operation.

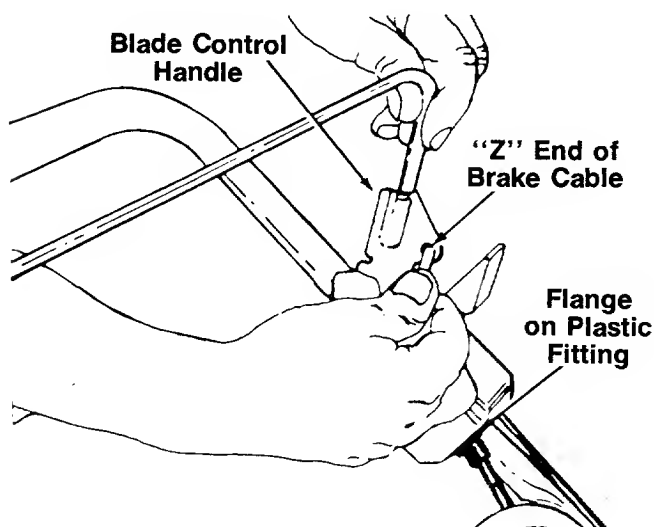


FIGURE 5.

3. Hook the "Z" end of the brake cable into the hole in the blade control handle from the inside to the outside as shown in figure 5.

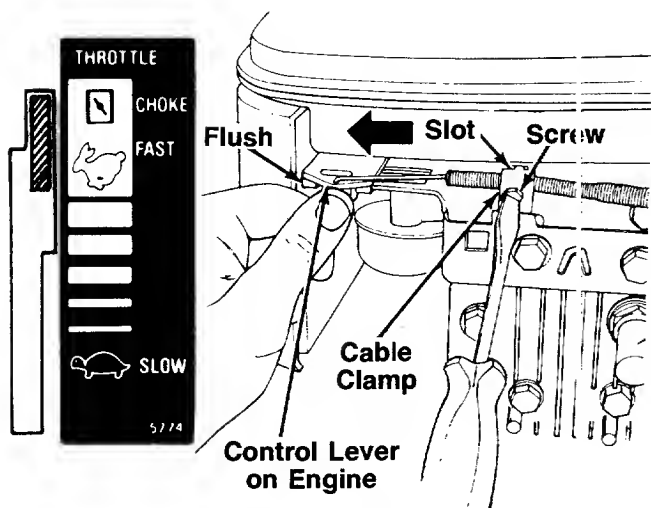


FIGURE 6A.—Models 109R, 116R and 119R

ATTACHING THE THROTTLE CABLE

Models 109R, 116R and 119R Only:

1. Push the throttle control lever on the handle all the way forward to CHOKE position. See figure 6A.
2. The throttle control cable is attached to the upper handle. Route the throttle control cable under the lower handle and to the outside of the handle mounting bracket and height adjustment lever (Model 176R only). Hook the "Z" end of the throttle control cable into the hole in the control lever on the engine. See figure 6A.
3. Using a 5/16" wrench or nutdriver, remove the screw on the cable clamp shown in figure 6A. Slip the control cable under the clamp. Replace the screw (cable should be above the screw), but do not tighten screw (cable must still move freely beneath the clamp). Make certain the tab on the cable clamp is seated into the slot on the engine.
4. Push the control lever on the engine as far toward the **outside** of the engine as it will go. The edge of the control lever should be flush with the bracket on the engine. See figure 6A. Hold the control lever in this position as you tighten the screw on the cable clamp to secure the throttle cable.
5. Loosen the screw on the clamp on the side of the engine. Slip the cable casing under the clamp to secure the cable **away from the muffler**. Be careful not to bend or kink the cable. Tighten the screw.

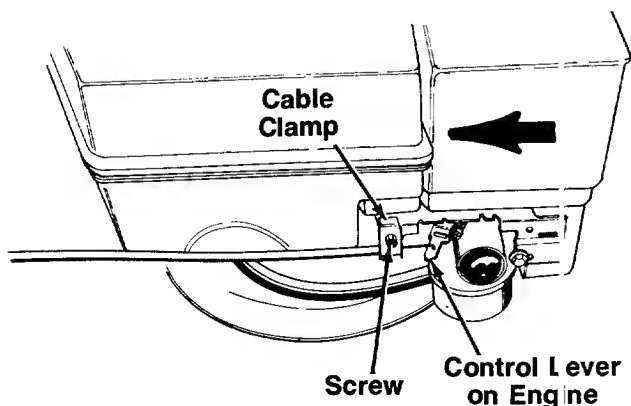


FIGURE 6B.—Model 117R Shown

ATTACHING THE THROTTLE CABLE

Models 115R and 117R Only:

1. Place the throttle control lever on the handle in FAST position.
2. The throttle control cable is attached to the upper handle. Route the throttle control cable under the lower handle, inside the handle mounting bracket and beneath the catcher panel. Hook the "Z" end of the throttle control cable into the control lever on the engine as shown in figure 6B.
3. Loosen (do not remove) the screw on the cable clamp shown in figure 6B. Slip the control casing under the clamp (cable must move freely beneath the clamp).
4. Place the control lever on the engine in the full open position by pushing it as far toward the **rear** of the unit as it will go. Tighten the screw on the cable clamp to secure the cable in this position.

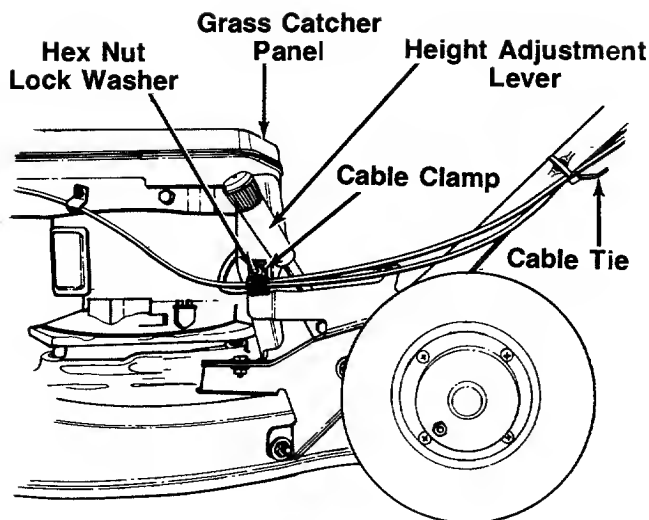


FIGURE 7.

SECURING THE CABLES (Hardware D)

Attach the brake and throttle control cables to the grass catcher panel as follows, using the cable clamp provided.

1. **Models 115R thru 119R:** Open the clamp and slip the cables inside.
2. **Models 115R thru 119R:** Remove the top hex lock nut and flat washer on the side of the grass catcher panel. Attach the cable clamp as shown in figure 7. Secure with flat washer and hex lock nut.
3. Place the height adjustment lever in the lowest position.

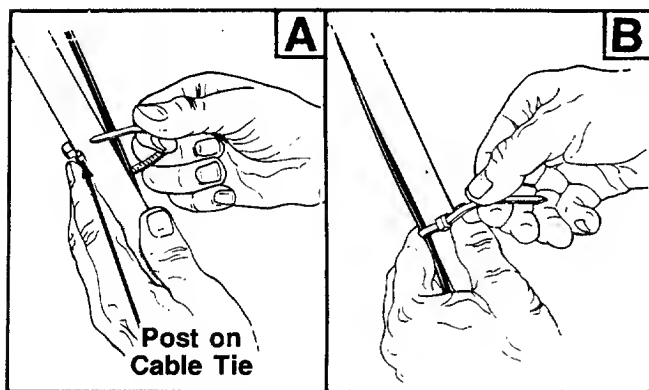


FIGURE 8.

4. Secure the control cables to the left side of the handle with the cable ties as follows, taking the slack out of the cables so they do not contact the wheel.

A. Insert posts on cable ties into holes provided on the lower handle, one near the top and one near the bottom of lower handle. The holes may be on either the inside or outside of the handle. See figure 8A.

B. Secure the cables with the cable ties. See figure 8B.

C. Trim excess ends of cable ties.

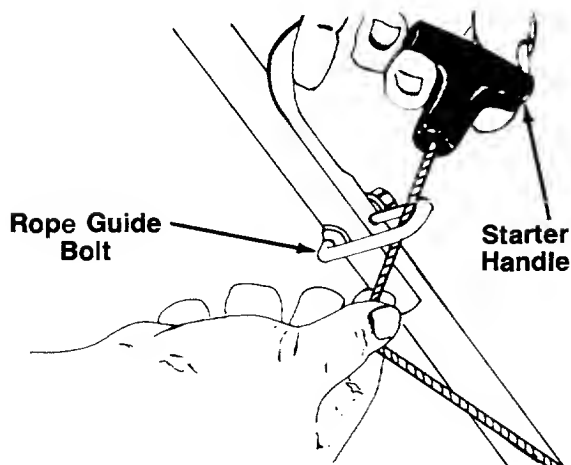


FIGURE 9.

ATTACHING THE STARTER ROPE

1. The starter rope protrudes from the top of the engine. On Models 115R thru 119R, the starter rope may be already attached to the rope guide at the catcher panel. Additional rope may be wound around the starter handle. If so, unwind the rope from the handle.
2. With the spark plug wire disconnected and grounded, depress the blade control handle and pull the rope out of the engine.
3. Slip the starter rope into the rope guide bolt as shown in figure 9.
4. Tighten the hex nut on the rope guide bolt securely.

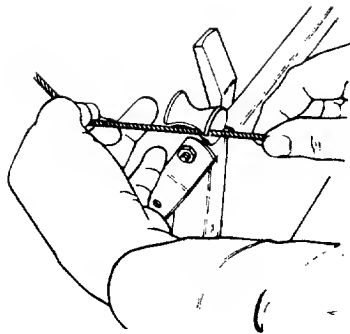


FIGURE 10.

5. **Models 115R thru 119R Only:** If not already assembled, slip the starter rope into the rope guide as shown in figure 10.

IMPORTANT

If your unit is equipped with both a side chute deflector and top discharge chute and grass bag, follow the instructions for top discharge mowers. After assembly is completed, it can then easily be converted to a side discharge mower.

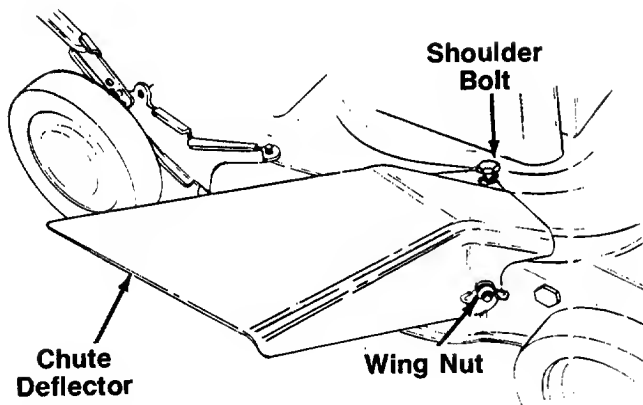


FIGURE 11.

SIDE DISCHARGE MOWERS ONLY (Model 109R)

This section is for side discharge models only. If your mower is a top discharge model (with grass bag), proceed to the next section.

1. Attach the chute deflector by first placing it over the rear bolt in the side of the deck, then over the front bolt and sliding it into position, with shoulder bolt on deck in notch on deflector.
2. Secure the front of the deflector to the bolt protruding from the deck with one wing nut. See figure 11.

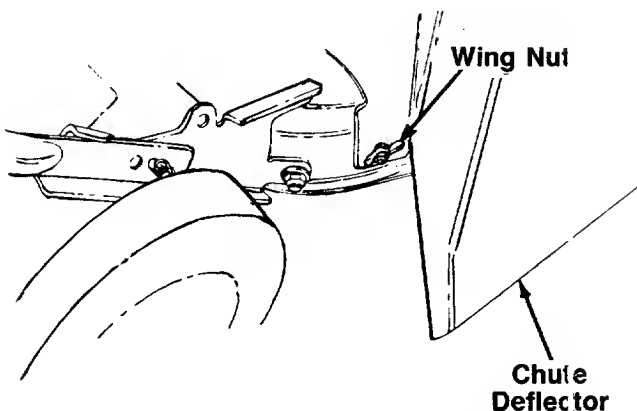


FIGURE 12.

3. Secure the back of the deflector in the same manner. See figure 12.



WARNING

Never operate your unit without either the side chute deflector or entire top discharge chute and catcher panel assembly (optional equipment) in place.

NOTE

A grass catcher kit is available which will convert your mower from side to top discharge. Order model number 190-077-000.

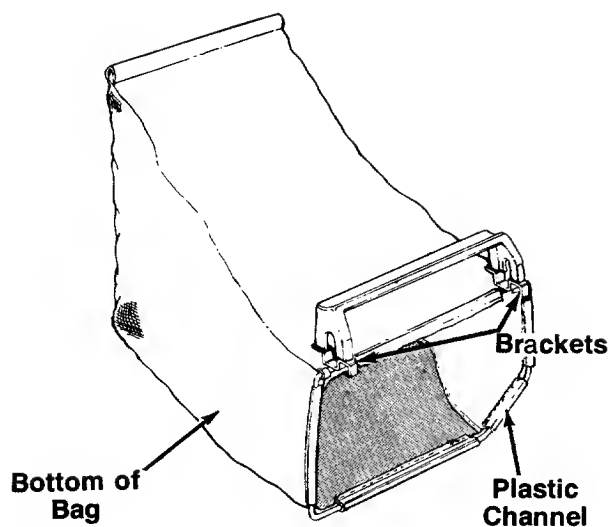


FIGURE 13.

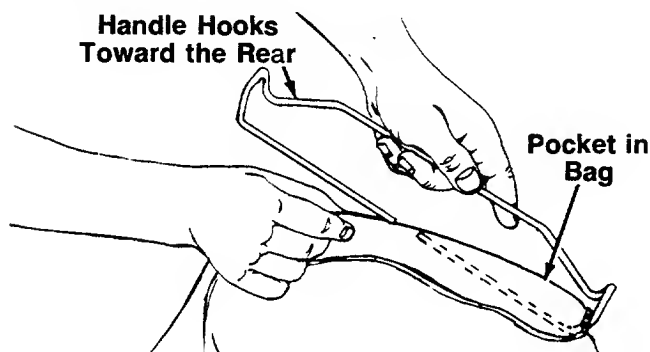


FIGURE 14.

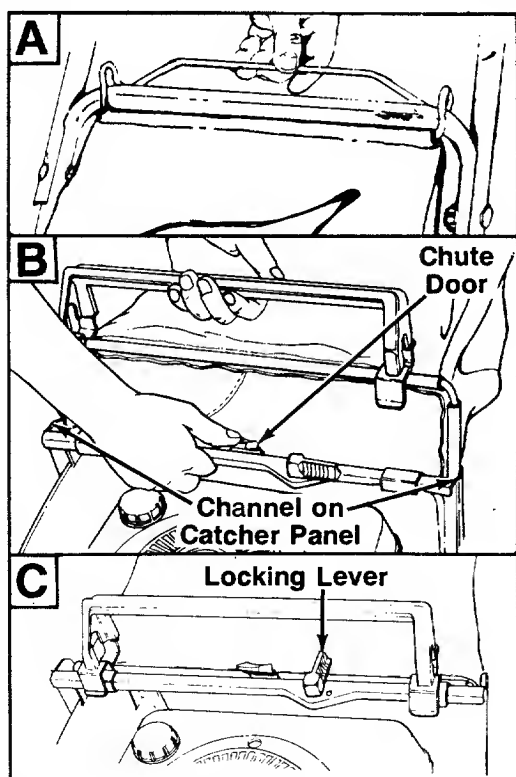


FIGURE 15.

TOP DISCHARGE MOWERS ONLY

(Models 115R thru 119R)

Grass Catcher Assembly

1. Place bag over frame (black plastic side is the bottom of bag). Handle on frame goes to the top of bag. Brackets hook toward the front. See figure 13.
2. Secure bag to frame by slipping plastic channels on bag over frame. See figure 13.
3. Attach the rear handle to bag by inserting one side of handle into pocket on the rear of the bag. The handle should hook toward the rear of the bag as shown in figure 14. Thread all the material onto one side, then slide it over onto the other side. See figure 14.

To Attach Bag To Mower



DO NOT operate the mower unless the complete grass catcher or side chute deflector is properly mounted on the mower.

1. Hook the handle on the rear of the grass catcher over the lower handle of the mower. See figure 15A.
2. Hold the chute door on the catcher panel open as shown in figure 15B.
3. Slide the frame of the grass catcher down into the channels on the catcher panel. The top portion of the frame goes over the catcher panel.
4. Secure the grass catcher by turning the locking lever to the locked position as shown in figure 15C.

To remove the grass catcher, turn the locking lever to the unlocked position, unhook the rear handle and lift the grass catcher straight up.

To convert your mower to a side discharge unit, remove only the grass bag and top discharge chute, and assemble the side chute deflector. It is not necessary to remove the catcher panel and brackets.

FINAL ASSEMBLY OF MOWER (Hardware C)

1. If plastic plug is not already assembled, insert plastic plug into hole in the top rear of the deck by slipping one end of plug into hole, then pressing down on the other end of plug. Use a soft hammer if necessary.
2. Attach hub caps (optional) to the wheels by lining up the tabs on the hub caps with the holes in the wheels. Push to lock in position.
3. Make certain all nuts and bolts are tightened securely.

CONTROLS

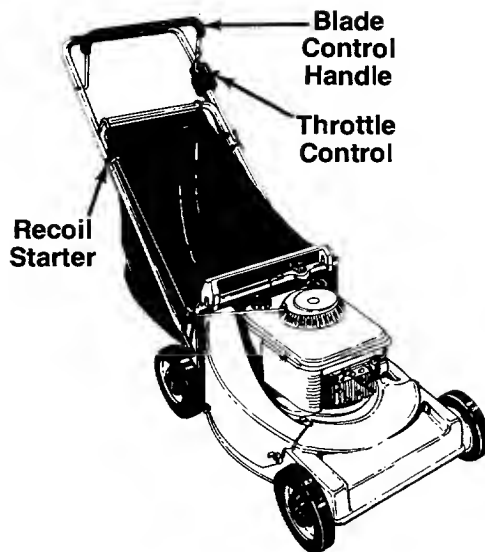


FIGURE 16.—Model 116R Shown

BLADE CONTROL HANDLE

WARNING
THIS CONTROL MECHANISM IS A
SAFETY DEVICE NEVER ATTEMPT
TO BYPASS ITS OPERATIONS

The blade control handle is located on the upper handle of the mower. See figure 16. The blade control handle must be depressed in order to operate the unit. Release the blade control handle to stop the engine and blade.



WARNING

The blade will be rotating whenever the engine is running.

THROTTLE CONTROL

The throttle control is located on the left side of the upper handle. It is used to regulate the engine speed.



WARNING

The throttle control cannot be used to stop the engine.

RECOIL STARTER

The recoil starter handle is attached to the handle. See figure 16. Stand behind the unit in the operating position to start the unit.

OPERATION



FIGURE 17.

Keep hands and feet away from the chute area on cutting deck. See figure 17.

NOTE

For shipping purposes your mower is set with the wheels in a low cutting height position. For best results raise the cutting position until it is determined which height is best for your lawn. See cutting height adjustment section.

GAS AND OIL FILL-UP

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your mower. Read instructions carefully.



WARNING

Never fill fuel tank indoors, with engine running or until the engine has been allowed to cool for at least two minutes after running.

BEFORE STARTING

1. Attach spark plug wire to spark plug. If unit is equipped with a rubber boot over the end of the spark plug wire, make certain the metal loop on the end of the spark plug wire (inside the rubber boot) is fastened securely over the metal tip on the spark plug. See figure 18.

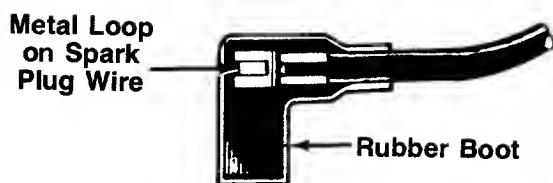


FIGURE 18.

2. **Models 109R, 116R and 119R only:** The fuel shut-off valve is located beneath the fuel tank. The fuel shut-off valve should be in the open position. See figure 19. Open fuel shut-off valve if it is closed.

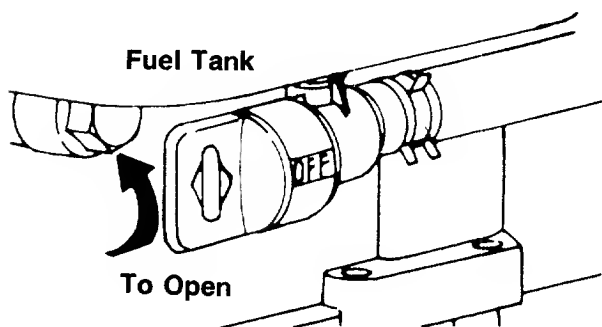


FIGURE 19.—Models 109R, 116R and 119R

TO START ENGINE AND ENGAGE BLADE

1. **Models 115R and 117R:** Move the throttle control lever to FAST or START position.
Models 109R, 116R and 119R: Move the throttle control lever to CHOKE position.

NOTE

A warm engine may not require choking.

2. **Models 115R and 117R only:** Prime engine as instructed in the separate engine manual.
3. Standing behind the unit, depress the blade control handle and hold it against the upper handle.
4. Grasp the recoil starter handle and pull back rapidly, extending rope fully. Return it slowly to the rope guide bolt.
5. After engine starts, move throttle control to FAST or desired engine speed. (On Models 109R, 116R and 119R, move the throttle control lever at least halfway back, then forward to obtain FAST position.)

NOTE

If any problems are encountered, refer to the Trouble Shooting Guide on page 17.



Never operate your unit without either the side chute deflector or entire top discharge chute and catcher panel assembly in place.

TO STOP ENGINE AND BLADE

1. Release the blade control handle to stop the engine and blade.



The blade continues to rotate for a few seconds after the engine is shut off.

2. Disconnect the spark plug wire and ground it against the engine to prevent accidental starting while equipment is unattended.

USING YOUR ROTARY MOWER



DO NOT operate mower unless the complete grass catcher or side chute deflector is properly mounted on the mower.

Be sure that lawn is clear of stones, sticks, wire, or other objects which could damage lawn mower or engine. Such objects could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator and others.

For the best results, do not cut wet grass because it tends to stick to the underside of the mower, preventing proper discharge of grass clippings, and could cause you to slip and fall. New grass, thick grass or wet grass may require a narrower cut. Blade speed should be adjusted to the condition of the lawn.

When using the side discharge mower, the best mowing pattern is one that allows the clippings to discharge towards the uncut part of the lawn. This permits re-cutting of the clippings to further pulverize them. When cutting high weeds, discharge towards cut portion, then recut at right angles to first direction.

For best results, cut off one-third or less of the total length of the grass. Lawn should be cut in the fall as long as there is growth.

This mower is designed to be operated at full throttle to give you the best cut and do the most effective job of bagging the cut grass.

➡ IMPORTANT

If you strike a foreign object, stop the engine. Remove wire from spark plug, thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower. Extensive vibration of the mower during operation is an indication of damage. The unit should be promptly inspected and repaired.

ADJUSTMENTS



WARNING

Do not at any time make any adjustment to lawn mower without first stopping engine and disconnecting spark plug wire.

CUTTING HEIGHT ADJUSTMENT

The height adjustment handle is located on the left side of the deck. The handle may be placed in one of nine cutting height positions. Push the handle to the left and then either forward to lower the cutting height or backward to raise the cutting height. See figure 20.

For rough or uneven lawns, move the height adjustment handle to a position which will give a higher cutting height.

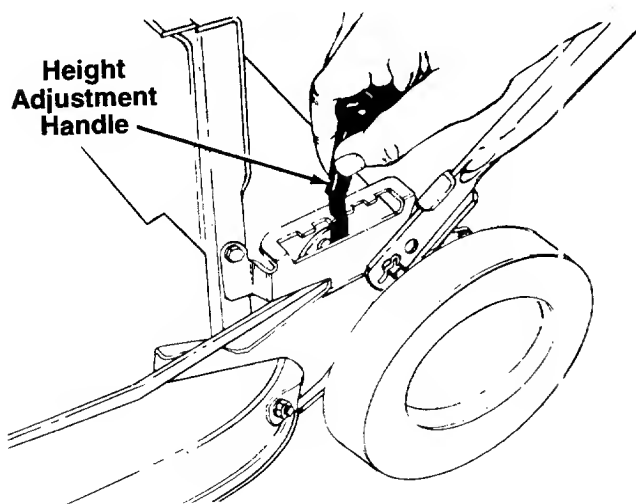


FIGURE 20.

THROTTLE

The throttle control wire assembly can be adjusted if necessary. Loosen the screw on the cable clamp closest to the control lever on engine. Adjust as instructed in steps 1 and 4 of "Attaching the Throttle Control Cable" in Assembly Instructions.

CARBURETOR ADJUSTMENTS



WARNING

If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude and load. Refer to the separate engine manual packed with your mower for carburetor adjustment information.

➡ NOTE

A dirty air cleaner will cause an engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor. Refer to the separate engine manual.

LUBRICATION



WARNING

Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of work on lawn mower.

Blade Control—Lubricate the pivot points on the blade control handle and the brake cable at least once a season with light oil. See figure 21. The blade control must operate freely in both directions.

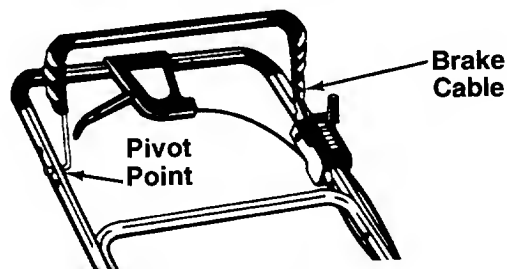


FIGURE 21.

Discharge Chute Door Mechanism (Models 115R thru 119R)—The torsion spring and pivot point should be lubricated periodically with light oil to prevent any rust or binding. Door must work freely.

Wheels—Mower may be provided with ball bearing wheels. Lubricate at least once a season with light oil. Also, if the wheels are removed for any reason, lubricate the surface of the axle bolt and the inner surface of the wheel with light oil. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

Engine—Follow engine manual for lubrication instructions.

Throttle—Periodically lubricate throttle control lever and throttle wire assembly with a few drops of light oil for ease of operation.

MAINTENANCE



Be sure to disconnect and ground the spark plug wire before performing any repairs or maintenance.



NOTE

When tipping the unit, empty the fuel tank and keep engine spark plug side up.

TROUBLE SHOOTING

Refer to page 17 of this manual for trouble shooting information.

CUTTING BLADE

When removing the cutting blade for sharpening or replacement, protect hands by using heavy gloves or a rag to grasp the cutting blade. Remove the bolt and blade bell washer which hold the blade and adapter to the engine crankshaft. Remove the blade and adapter from the crankshaft.



CAUTION

Periodically inspect the blade adapter for cracks, especially if you strike a foreign object. Replace when necessary.

When sharpening the blade, follow the original angle of grind as a guide. It is **extremely important** that each cutting edge receives an equal amount of grinding to prevent an unbalanced blade. An unbalanced blade will cause excessive vibration when rotating at high speeds, may cause damage to the mower and could break, causing personal injury.

The blade can be tested by balancing it on a round shaft screwdriver. Remove metal from the heavy side until it balances evenly.

Before reassembling the blade and the blade adapter to the unit, lubricate the engine crankshaft, the inner surface of the blade adapter and the center bolt with light oil. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

When replacing the blade, be sure to install the blade with the side of the blade marked "Bottom" (or with part number) facing the ground when the mower is in the operating position.

Blade Mounting Torque

Center Bolt: 375 in. lb. min., 450 in. lb. max. If lacking torque wrench, tighten until the blade bell washer is flattened.

To insure safe operation of your unit, **all** nuts and bolts must be checked periodically for correct tightness.

DECK

The underside of the mower deck should be cleaned after each use to prevent a buildup of grass clippings, leaves, dirt or other matter. If this debris is allowed to accumulate, it will invite rust and corrosion, and may cause an uneven discharge of grass clippings at the next cutting.

The deck may be cleaned by tilting the mower and scraping clean with a suitable tool (make certain the spark plug wire is disconnected).

ENGINE

Refer to the separate engine manual for all engine maintenance instructions.

Maintain **engine oil** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every 25 hours under normal conditions. Clean every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

The **spark plug** should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each mowing season; check engine manual for correct plug type and gap specifications.

Clean the engine regularly with a cloth or brush. Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance and life. Be certain to remove all grass, dirt and combustible debris from muffler area.

OFF-SEASON STORAGE

The following steps should be taken to prepare lawn mower for storage.

1. Clean and lubricate mower thoroughly as described in the lubrication instructions.
2. Refer to engine manual for correct engine storage instructions.
3. Coat mower's cutting blade with chassis grease to prevent rusting.

4. Store mower in a dry, clean area.

NOTE

When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially cables and all moving parts.

NOTE

The use of any accessory on this Rotary Mower other than those manufactured by the mower manufacturer is **not** recommended.

GRASS CATCHER Model 077 is available as optional equipment for the mower Model 109R shown in this manual.



To reduce the risk of injury, do not operate mower unless rear trailing shield and guard or entire grass catcher is in its proper place.

NOTE

Under normal usage bag material is subject to wear and should be checked periodically. Be sure any replacement bag complies with the mower manufacturer's recommendations.

For replacement bags, use only factory authorized replacement bag No. 764-0212B (Black) or 764-0216B (Grey).

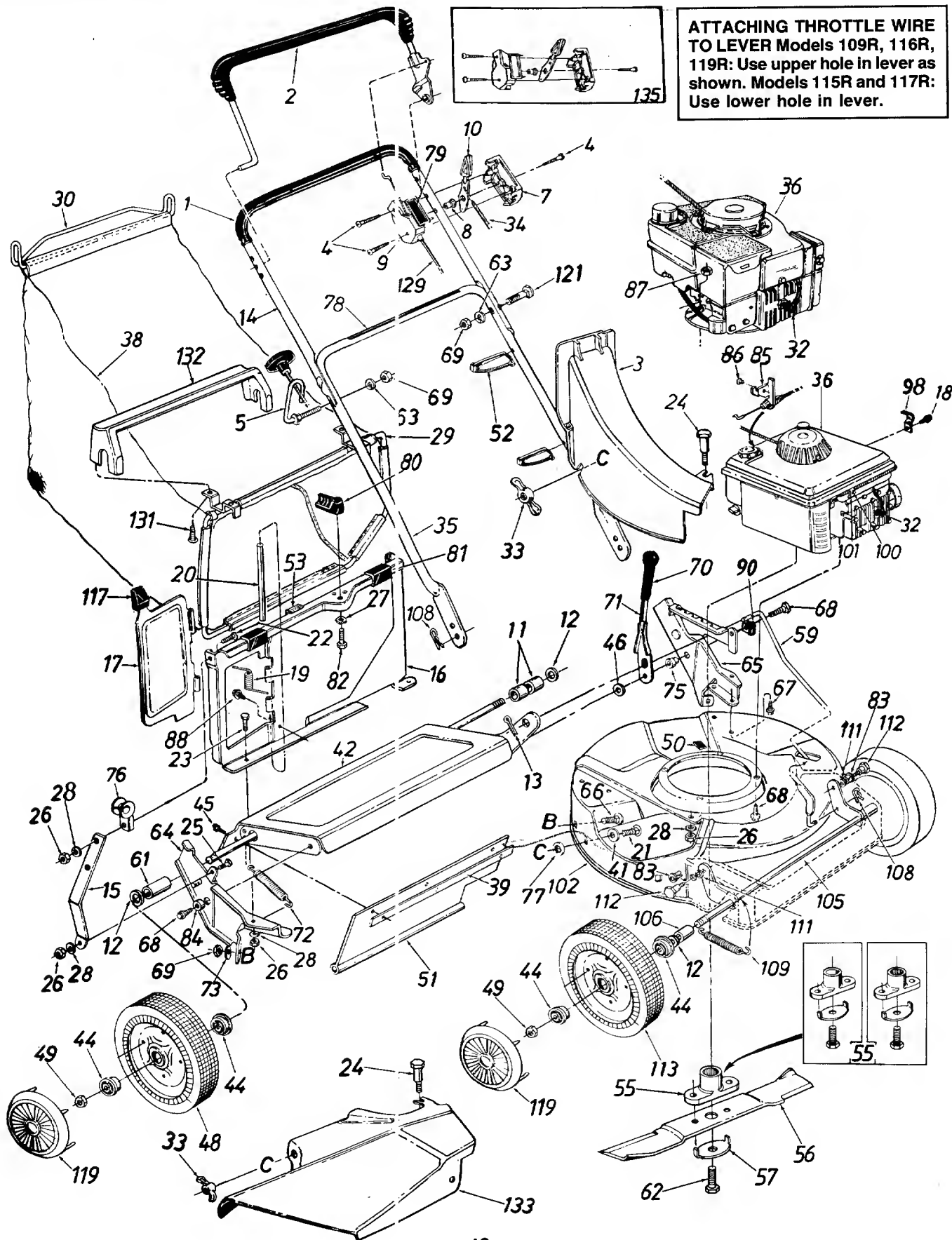
Trouble Shooting Guide

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	<ol style="list-style-type: none"> 1. Blade control handle disengaged. 2. Spark plug wire disconnected. 3. Throttle control lever not in CHOKE or START position. 4. Fuel shut-off valve closed (if so equipped). 5. Fuel tank empty, or stale fuel (or fuel mixture). 6. Blocked fuel line. 7. Faulty spark plug. 8. Engine flooded. 	<ol style="list-style-type: none"> 1. Engage blade control handle. 2. Connect wire to spark plug. 3. Move throttle lever to CHOKE or START position. 4. Open fuel shut-off valve. 5. Fill tank with clean, fresh gasoline (or correct fuel mixture). 6. Clean fuel line. 7. Clean, adjust gap or replace. 8. Remove spark plug, dry the plug, and crank engine with plug removed and throttle in off position. Replace spark plug, connect wire and resume starting procedures.
Engine runs erratic	<ol style="list-style-type: none"> 1. Unit running in CHOKE or START position. 2. Spark plug wire loose. 3. Blocked fuel line or stale fuel. 4. Vent in gas cap plugged. 5. Water or dirt in fuel system. 6. Dirty air cleaner. 7. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Move throttle lever to FAST position. 2. Connect and tighten spark plug wire. 3. Clean fuel line; fill tank with clean, fresh gasoline. 4. Clear vent. 5. Drain fuel tank. Refill with fresh fuel. 6. Clean air cleaner.† 7. Adjust carburetor.†
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low (or incorrect fuel mixture). 2. Air flow restricted. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil (or fuel mixture). 2. Remove blower housing and clean.† 3. Adjust carburetor.†
Occasional skip (hesitates) at high speed	<ol style="list-style-type: none"> 1. Carburetor idle speed too slow. 2. Spark plug gap too close. 3. Carburetor idle mixture adjustment improperly set. 	<ol style="list-style-type: none"> 1. Adjust carburetor.† 2. Adjust gap to .030". 3. Adjust carburetor.†
Idles poorly	<ol style="list-style-type: none"> 1. Spark plug fouled, faulty or gap too wide. 2. Carburetor improperly adjusted. 3. Dirty air cleaner. 	<ol style="list-style-type: none"> 1. Reset gap to .030" or replace spark plug. 2. Adjust carburetor.† 3. Clean air cleaner.†
Excessive vibration	<ol style="list-style-type: none"> 1. Cutting blade loose or unbalanced. 2. Bent cutting blade. 	<ol style="list-style-type: none"> 1. Tighten blade and adapter. Balance blade. 2. Replace blade.
Mower will not discharge grass	<ol style="list-style-type: none"> 1. Engine speed too low. 2. Wet grass. 3. Excessively high grass. 	<ol style="list-style-type: none"> 1. Set throttle between 3/4 and full throttle. 2. Do not mow when grass is wet; wait until later to cut. 3. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath (1/2 width).
Uneven cut	Dull blade.	Sharpen or replace blade.

†Refer to separate engine manual packed with your unit.

Note: For repairs beyond the minor adjustments listed above, contact your local authorized service dealer.

Models 109R, 115R, 116R, 117R and 119R



ATTACHING THROTTLE WIRE TO LEVER Models 109R, 116R, 119R: Use upper hole in lever as shown. Models 115R and 117R: Use lower hole in lever.

Models 109R, 115R, 116R, 117R and 119R

PARTS LIST FOR MODELS 109R, 115R, 116R, 117R AND 119R 21" ROTARY MOWERS

REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
1	720-0226		Foam Grip	49	712-0346		Hex L-Nut 1/2-20 Thd.
	718-0145		Grip	50	731-0564		Plug
2	731-0609		Control Handle Ass'y.—L.H.	51	731-0671A	N	Rear Flap 3.75" x 17.30" Lg.
3	731-0733A	N	Top Discharge Chute Ass'y.†	52	726-0240		Cable Tie
4	710-0796		Truss Mach. Scr. #12 x 1.50" Lg.	53	722-0139		Foam Strip 1" Lg.†
5	710-0842B	N	Rope Guide Bolt	55	753-0462		Blade Adapter Kit—Keyed (109R, 119R)
7	731-0817		Control Panel Half		753-0463		Blade Adapter Kit—Splined (115R, 116R, 117R)
8	731-0524		Control Disc Pin	56	742-0306		21" Blade (109R, 115R, 116R, 119R)
9	731-0816		Clutch Panel Half		742-0521		21" Blade (117R)
10	731-0528A	N	Throttle Control Lever	57	736-0415		Blade Bell-Wash. .44" I.D. x 2.38"
11	711-0500		Spacer .526" I.D. x .690" O.D. x .640" Lg.	59	747-0510		Height Adj. Rod. 19.42" Lg.
12	736-0108		Fl-Wash. .510" I.D. x .75"	61	711-0313		Sleeve .526" I.D. x .69"
13	714-0507		Cotter Pin 3/32" Dia. x .75" *	62	710-0757		Hex Bolt 7/16-20 x 1.5" Lg. (115R, 116R, 117R)
14	749-0438A		Upper Handle—Painted		710-1044	N	Hex Bolt 3/8-24 x 1.5" Lg. (109R, 119R)
	749-0436A		Upper Handle—Chrome	63	736-0119		L-Wash. 5/16" I.D. *
15	16129		Panel Support Brkt.†	64	16136		R.H. Handle Wheel Brkt. Ass'y.
16	17092A		Top Catcher Panel Ass'y.†	65	16137		L.H. Handle Wheel Brkt. Ass'y.
17	17095		Top Discharge Door†	66	710-0260		Carriage Bolt 5/16-18 x .62" *
18	710-0429		Hex B-Tap Scr. #10 x .38" (109R, 116R, 119R)	67	710-0603		Hex Wash. Hd. B-Tap Scr. 5/16-18
19	732-0483A		Torsion Spring†	68	710-0654A	N	Hex Wash. Hd. TT-Tap Scr. 3/8-16
20	747-0514		Pivot Pin†	69	712-0267		Hex Nut 5/16-18 Thd. *
21	710-0134		Carriage Bolt 1/4-20 x .62" *	70	720-0223		Grip
22	710-0225		Truss Mach. Scr. 1/4-20 x .75" Lg.†	71	732-0473B	N	Height Adj. Lever
23	710-0289		Hex Bolt 1/4-20 x .50" Lg.†	72	732-0481		Extension Spring 3.8" Lg.
24	738-0704		Shoulder Bolt .312 Dia. x .18 Lg. Special	73	736-0242		Bell-Wash. 5/16" I.D.
25	710-0258		Hex Bolt 1/4-20 x .62" Lg. *	75	750-0624		Shld. Spacer .500" Dia.
26	712-0287		Hex Nut 1/4-20 Thd. *	76	719-0279		Rope Guide†
27	736-0271		Spring Wash. .32" I.D.†	77	726-0233		Bolt Retainer 1/4 x .50" O.D.
28	736-0329		L-Wash. 1/4" I.D. *	78	777-5776		Instruction Label
29	16702B	N	Front Grass Catcher Frame†	79	777-5774		Control Label
30	747-0495		Upper Bag Handle†	80	720-0224		Grass Catcher Locking Knob†
32	735-0639		Spark Plug Insulator	81	731-0880	N	Panel Clip†
33	712-0388		Wing Nut w/Washer	82	710-0875		Hex Wash. TT-Tap Scr. 1/4-20 x .75" Lg.†
34	746-0671		Throttle Control Wire—55" (117R)	83	741-0491		Flanged Nyliner Brg.
	746-0672		Throttle Control Wire—58" (109R, 116R, 119R) YELLOW	84	750-0736		Spacer .383" I.D. x .503" O.D.
	746-0673		Throttle Control Wire—47" (115R) WHITE	85	14924		Cable Bracket (109R, 116R, 119R)
35	749-0504C	N	Lower Handle—Painted	86	728-0171		Pop Rivet .156" Dia. (109R, 116R, 119R)
	749-0505C	N	Lower Handle—Chrome	87	712-0798		Hex Nut 3/8-16 Thd. * (117R)
36	—		Engine	88	710-0429		Hex B-Tap Scr. #10 x .38"†
38	764-0212B	N	21" Top Discharge Grass Bag—Black†	90	726-0175		Clamp
	764-0216B	N	21" Top Discharge Grass Bag—Grey†	98	12894		Cable Clamp (109R, 116R, 119R)
39	14835		Retaining Strip	100	710-0436		Hex B-Tap Scr. #10 x .62" (109R, 116R, 119R)
41	736-0204		Fl-Wash. .344" I.D. x .62"	101	751-0463	638	Cable Clamp (109R, 116R, 119R)
42	16131A		Rear Axle Ass'y.	102	16125		21" Deck Ass'y.
44	741-0180		Flange Ball Bearing 1/2" I.D.	105	10662B		Front Axle Ass'y.
45	710-0776A	N	Hex AB-Tap Scr. 1/4 x .62"				
46	736-0258		Fl-Wash. .38" I.D. x 1.0"				
48	**		Wheel Ass'y.—Comp. 8 x 2"				

Models 109R, 115R, 116R, 117R and 119R

PARTS LIST FOR MODELS 109R, 115R, 116R, 117R AND 119R 21" ROTARY MOWERS (CONTINUED)

REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
106	711-0313		Sleeve .526" I.D. x .690" O.D. x .880" Lg.	129	746-0479A	N	Control Cable—55" Lg. (115R, 117R)
108	714-0104		Intern. Cotter Pin 5/16" Dia.		746-0480A	N	Control Cable—46" Lg. (109R, 116R, 119R)
109	732-0482		Extension Spring 3.2" Lg.	131	710-0969		Truss Mach. B-Tap Scr. #12 x 1.5" Lg.
111	736-0221		Intern. L-Wash. 3/8 I.D.	132	731-0801		Bag Handle (Black)†
112	738-0705		Shld. Bolt .575" Dia. x .42"		731-0802		Bag Handle (Grey)†
113	**		Wheel Ass'y. Comp.	133	731-0886		Side Chute Deflector Ass'y.
117	720-0190		Door Grip†	135	753-0430		Kit—Control Housing Comp.
119	††		Hub Cap				
121	710-0671		Curved Carr. Bolt 5/16- 8 x 1.38" Lg.				

†Top Discharge Models 115R, 116R, 117R and 119R Only.

*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

CODE: N notates a **new part** (not previously existing). A three digit number is the **color code** (use if color or finish is important when ordering parts). See chart below. [i.e., (part no.)-638 for Red Finish].

NOTE
Specifications subject to change without notice or obligation.

Color Codes

460—Green Flake	630—Blue
483—Charcoal Grey	635—Grey
498—Yellow	636—White
499—Beige	637—Black
606—Orange	638—Red
629—Silver Flake	640—Green

**WHEEL CHART

Size	Tread Type	Part No.
7 x 1.5"	Waffle	734-0922
7 x 1.75"	"T" Tread	734-1264
8 x 1.75"	Waffle	734-0924
8 x 1.75"	"T" Tread	734-1412

NOTE: The engine is not under warranty by the mower manufacturer... If repairs or service is needed on the engine, please contact your nearest authorized engine service outlet. Check the "Yellow Pages" of your telephone book under "Engines—Gasoline."



††HUB CAP CHART

Color	Part No.
Red	731-0124A
Orange	731-0254A
Black	731-0354A
Grey	731-0355A

PARTS INFORMATION

POWER EQUIPMENT PARTS AND SERVICE

Parts and service are available through the authorized service firms listed below. All orders should specify the model number of your unit, part numbers, description of parts and the quantity of each part required.

NOTE: If any parts are found to be missing or defective upon assembly of this unit, write to advise the factory so that immediate replacement can be made.

ALABAMA	BIRMINGHAM
Auto Electric & Carburetor Co. . .	2625 4th Ave. S. Box 2466 15233
ARKANSAS	NORTH LITTLE ROCK
Sutton's Lawn Mower Shop	5301 Roundtop Drive Box 368, Rt. 4 '2117
CALIFORNIA	PORTERVILLE
Billious	75 North D Street 13257
COLORADO	DENVER
Spitzer Industrial Products Co. . .	6601 N. Washington St. 30229
FLORIDA	JACKSONVILLE
Radco Distributors	4909 Victor St. Box 5459 32207
	HALEAH
Small Eng. Dist.	7995 W. 26th Court 33016
GEORGIA	EAST POINT
East Point Cycle & Key Inc.	2834 Church St. 30344
ILLINOIS	LYONS
Keen Edge Co.	8615 Ogden Ave. 30534
INDIANA	ELKHART
Parts & Sales Inc.	2101 Industrial Pkwy. Box 277 46516
IOWA	DUBUQUE
Power Lawn & Garden Equip. . . .	2551 J.F. Kennedy 52001
LOUISIANA	LAFAYETTE
Jourdan Engine Co.	214 W. Vermillion St. Box 3503 70501
MARYLAND	TAKOMA PARK
Center Supply Co.	6867 New Hampshire Ave. 20912
MASSACHUSETTS	SPRINGFIELD
Morton B. Collins Co.	300 Birnie Ave. 01107
MICHIGAN	MOUNT CLEMENS
Power Equipment Dist.	340 Hubbard 48043
MINNESOTA	PLYMOUTH
Hance Distributing Inc.	12795 16th Ave. North . . 55441
MISSOURI	EARTH CITY
Oscar Wilson Engine & Parts . . .	4159 Shoreline Dr. . . . 63045
	KANSAS CITY
Automotive Equip. Service	3117 Holmes St. 64109
NEW JERSEY	ALLOWAY
Piersons	Canal St., Box 494 . . . 08001

BRIGGS AND STRATTON, TECUMSEH AND PEERLESS PARTS AND SERVICE

Briggs & Stratton, Tecumseh and Peerless parts and service should be handled by your nearest authorized engine service firm. Check the yellow pages of your telephone directory under the listing **Engines—Gasoline**, Briggs & Stratton or Tecumseh Lauson.

NEW YORK	CARTHAGE
Gamble Dist., Inc.	West End Ave. Box 389 13619
NORTH CAROLINA	GREENSBORO
Dixie Sales Company	335 N. Green Box 1408 27402
OHIO	CARROLL
Stebe's Mid-State Mower Supply	Box 366, 71 High St. . . . 43112
	CLEVELAND
Bleckrie, Inc.	7900 Lorain Ave. 44102
National Central	WADSWORTH
Burton Supply Co.	687 Seville Rd. 44281
	YOUNGSTOWN
PENNSYLVANIA	1301 Logan Ave. Box 929 44501
EECO Inc.	HARRISBURG
	4021 N. 6th St. 17110
Thompson Rubber Co.	WILLOW GROVE
	850 Davisville Rd. 19090
Bluemont Co.	PITTSBURGH
Frank Roberts & Sons	11101 Frankstown Rd. . 15235
	PUNXSUTAWNEY
Scranton Auto Ignition Co.	R.D. 2 15767
TENNESSEE	SCRANTON
Ace Distributors	1133-35 Wyoming Ave. . 18509
	KNOXVILLE
American Sales & Service, Inc. . .	2103 Magnolia 37917
TEXAS	MEMPHIS
Marr Brothers, Inc.	3035-43 Bellbrook 38116
	DALLAS
Engine House Inc.	423 E. Jefferson 75203
UTAH	SAN ANTONIO
Powered Products	4918 Golden Quail 78249
VIRGINIA	SALT LAKE CITY
RBI Corp.	1661 N. Beck St. 84116
WASHINGTON	ASHLAND
Equip. Northwest	101 Cedar Ridge Dr. . . 23005
WISCONSIN	SEATTLE
Wisconsin Magneto Inc.	1410 14th Ave. 98122
PUERTO RICO	MILWAUKEE
CIE & Associates, Inc.	4727 N. Teutonia St. . . 53209
	AGUADILLA
	Box 427 Ramey Station 00604

WARRANTY PARTS AND SERVICE POLICY

(0588)

The purpose of warranty is to protect the customer from defects in workmanship and materials, defects which are NOT detected at the time of manufacture. It does not provide for the unlimited and unrestricted replacement of parts. Use and maintenance are the responsibility of the customer. The manufacturer cannot assume responsibility for conditions over which it has no control. Simply put, if it's the manufacturer's fault, it's the manufacturer's responsibility; if it's the customer's fault, it's the customer's responsibility.

CLAIMS AGAINST THE MANUFACTURER'S WARRANTY INCLUDES:

1. Replacement of Missing Parts on new equipment.
2. Replacement of Defective Parts within the warranty period.
3. Repair of Defects within the warranty period.

All claims MUST be substantiated with the following information:

1. Model Number, Serial Number and/or Data Code of unit involved.
2. Date unit was purchased or first put into service.
3. Date of Failure.
4. Nature of Failure.